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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,021	07/06/2000	Ki-Hyun Kim	678-504 (P9383)	4959

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Paul J Farrell Esq
Dilworth & Barrese
333 Earle Ovington Blvd
Uniondale, NY 11553

EXAMINER	
SHARMA, SUJATHA R	
ART UNIT	**PAPER NUMBER**
2684	15

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/611,021	KIM ET AL.	
	Examiner	Art Unit	
	Sujatha Sharma	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4,6-8,9,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Till [US 6,374,089] and Peherson [US 6,314,183].

Regarding claims 1,6,7,9,10 Till discloses a wireless communication device such as cellular telephones that have portion of the housing rotate about one or more hinge points to selectively cover or uncover the keypad, display etc. Till an opening/closing device in the main body and operative to rotate so as to displace the sub-body and main body relative to one another at an opening angle defined between the open and closed positions of the sub-body (see Figs. 1-3, summary of invention, col. 2, lines 47-63,col. 4, lines 48-66). Till further discloses a switch for driving the opening/closing device (see col. 5, lines 43-47). Till further discloses motor control electronics which control the operation of the motor to perform the opening/closing action of the flip cover (see Figs. 1-3, summary of invention, col. 2, lines 47-63, col. 3, lines 39-49, col. 4, lines 48-66).

Till, however does not disclose a detector to detect the opening angle of the opening/closing device and generate a signal to send to the motor controller.

Peherson, in the same field of endeavor, teaches the use of a detector (34 in fig.1) to detect the opening angle and a controller for controlling the rotation of opening/closing to a pre-determined angle. See summary of invention and column 3, lines 1-62.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide the above teachings of Peherson to Till to facilitate and control the automatic opening/closing of the sub-body over the main body of the mobile phone such as to prevent any damage to the motor.

Till and Peherson do not specifically disclose a method to deactivate the motor of the opening/closing device in the open position of the sub body.

However, it is inherent that when opening the cover/flip, the motor is activated, as discussed by Till, and when it reaches the open position, as discussed above, the motor stops/deactivated in order to prevent the damage of the motor if running in the fully open position and also to protect the cover/flip from breaking.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to include this feature in Till's invention in order to facilitate and control the automatic opening/closing of the sub-body over the main body of the mobile phone such as to prevent any damage to the motor or the opening/closing device.

An example showing this feature in an opening/closing device is discussed in the conclusion section.

Regarding claim 2, Till discloses the opening closing device to comprise of a hollow module housing with a through hole performed at one end thereof and a decelerating module

fixedly inserted in the module housing and including a gear train and a sub-body coupler operatively attached to the gear train fixed to an end of a driving module of the decelerating module, a part of the sub-body coupler projecting from the through hole of the module housing and being fixed to a side of the sub-body. See Figs 2-4, col. 3, line 10- col. 4, line 66, col. 5, line 41- col. 6, line 56.

Regarding claim 3, Till further discloses a driving motor in the decelerating module and a decelerating device coupled to the driving motor for reducing the number of rotations and increasing the driving force of the driving motor. See summary of invention, col. 3, line 10- col. 4, line 66, col. 5, line 41- col. 6, line 12.

Regarding claim 4. Pehersson discloses the use of magnet sensor for detecting the position of the movable element in relation to the apparatus housing. See abstract and summary of invention.

Regarding claim 8, Till further discloses the decelerating device to comprise of a reduction gear assembly rotatably coupled to the driving motor and a driving shaft rotatably fixed to the reduction gear assembly to rotate at a rotational speed which is lower than a rotational speed of the driving motor (see figs. 2-4, summary of invention, col. 5, lines 58- col. 6, line 12)

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Till [US 6,374,089] and Peherson [US 6,314,183] in view of Wohl [WO 92/09163].

Regarding claim 5, the modified Till as treated in claim 1 does not disclose the method of using a light/photo sensor to detect the opening/closing of the sub-body.

Wohl in the same field of endeavor teaches the use of sensor that lightens the keypad and display when the flip cover moved from its closed position to its open or extended position. See abstract and summary of invention.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to include the above teachings of Wohl in the modified Till's device in order for the mobile telephone to detect the position of the flip cover relative to the main housing and accordingly provide the on-hook/off-hook condition.

Response to Arguments

Applicant's arguments filed 4/1/04 have been fully considered but they are not persuasive.

Applicant argues that the primary reference Till does not disclose a method where the motor is deactivated after the flip/cover is in the fully open position.

However, it is inherent that when opening the cover/flip, the motor is activated, as discussed by Till, and when it reaches the open position, as discussed above, the motor stops/deactivated in order to prevent the damage of the motor if running in the fully open position and also to protect the cover/flip from breaking.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to include this feature in Till's invention in order to facilitate and control the

automatic opening/closing of the sub-body over the main body of the mobile phone such as to prevent any damage to the motor or the opening/closing device.

Conclusion

As way of example the Aspenson [US 4,124,055] reference is discussed here to show the teaching where a motor activates an opening/closing device, in this case a canopy door and further the motor is deactivated after the door/cover reaches the fully open position. Aspenson teaches a method of opening/closing device such as a canopy door which is controlled by activating and deactivating a motor by the operation of a switch. Further Aspenson discloses a method wherein the fully open position is detected by a detector/limiting switch, which then deactivates the motor. See col. 5, lines 4-21.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sujatha Sharma whose telephone number is 703-305-5298. The examiner can normally be reached on Mon-Fri 7.30am - 4.00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sujatha Sharma
May 10, 2004

NAY MAUNG
SUPERVISORY PATENT EXAMINER